COMMENT SET 15: DAVID K. SANGSTER

David K. Sangster
7465 Hollister Ave. #434
Goleta, CA 93117-2537

September 15, 2006 VIA E-MAIL

Peter Strait, Project Manager
California State Lands Commission
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825

Subject: Comments on the DRAFT ENVIRONMENTAL IMPACT REPORT for the ELLWOOD MARINE TERMINAL LEASE RENEWAL PROJECT

Dear Mr. Strait:

Initially, back in 1998, it was proposed by the operator that they would go through their voluminous archives and find the "as Built" drawings of the barge loading line that crosses the intertidal region. Once they were directed to inspect the line visually (in 2001) based on 1998 observations of loss of coating and potential damage, they pointed out that the drawings were no longer needed if they were to visually inspect the line anyway. So, as far as I know, no drawings were ever found – at least I have not seen any drawings nor have any been presented to the Energy Division or the SSRRC. The drawings would have dimensions and locations of the two bends seen in the photos when the line was exposed in 1996 and 1998 – data that could be used for stress analysis, etc – and a detailed description of the cathodic protection system. After a while is was proposed to replace the visual inspection with a GUL test of the pipeline – requiring digging down to only a few points on the line and inspecting the rest remotely, or with "Guided Ultrasonic" waves. The test was performed in 2002 and then again in 2003 – results were good, except that only after the second test and looking at the 1998 photos, it was determined that the section beyond the bends out toward the ocean was never covered by the tests as reported in the first GUL report – those were the sections of the worst observed damage and settling – the sections that were the main and only reason for the initial required visual inspection in 2001. Obviously those sections are blind spots even today and there are no GUL results for the section in the sand beyond the first bend or out to sea.

DS-1

My concerns, or RED FLAGS if I may, related to several issues, none of which have been fully addressed yet. They were put in writing at the request of the SSRRC and the operator in 2001, yet they have not yet been answered. The DEIR only partially mentions my concerns, but carefully avoids getting into too many details, or is some cases, avoids any details. These include (1) questions as to free span (as observed in 1998), (2) excessive settling or "subsiding" which was denied by the Energy division in 2001, but now mentioned in the DEIR on page 4.1-3, (3) cathodic protection issues which are dismissed without a detailed description of the cathotic protection system (there are no

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DS-2 cont.

drawings or specifications in a CP report that I have), (4) the nonexistent stress analysis of the section in the intertidal region, which again, mention is made of the 2003 stress analysis, but they avoid mentioning that it stopped at the sand bluff – THE 2003 STRESS ANALYSIS DID NOT INCLUDE THE SECTION ON THE BEACH. The fifth, and last RED FLAG, is the photo on the Internet that shows a black substance being released in the surf wash very close to where the buried pipeline crosses the beach. The photo was dismissed as evidence of a slow leak for several reasons – including the fact that if there was a leak it would be visible at all times, or better yet, the operator believed it is only seaweed.

1) CONCERNS ABOUT EXCESSIVE FREE SPAN AND ASSOCIATED STRESSES

The free span observed during the storms of February 1998 when a lot of sand was scoured out by the waves, surf and moving debris (including some very large beams with iron spikes and even a bathtub) was at first dismissed as being less that the "safe" 90 feet – after several iterations, the "safe" free span was reduced down to 30 feet, which was exceeded in 1998. (Please note that a very similar set of "iterations" were made recently when another 90 foot "safe" free span length was given for another pipeline – it was determined that the calculations did not include the weight of the product!) I still maintain that the stresses that occurred at the time of maximum free span are still there today – the line was never brought back up to its pre-stressed position. The GUL tests of that section of line indicate that the length is close to 100 feet – without proper drawings it is hard to tell if that is correct, but the photo of maximum free span shows most of that "100 foot" section in free span. Needless to say, those stresses would have to be superimposed onto any seismic stresses – again, the 2003 stress analysis did not cover either that "100 foot" section, or the section between the two bends that subsided during the storms of February 1998. In the draft EIR it is mentioned that "to date the CGS has not zoned offshore California under the Seismic Hazard Mapping Act" on page 4.1-10 – that may be true as most structures are on land and very little of California's offshore will ever be developed. Since, however, the section of pipeline of most concern due to the direct observation is within a few hundred feet of land – it would be very wise to use the conditions of the closest point on land for a seismic analysis – and very unwise to forego the analysis just because a seismic region on the map stops at the shoreline. Also, any free span and/or settling does put the line into tension – a condition that is not good because of possible stress concentrations at imperfections, thin sections, and BENDS. That is one reason to carefully monitor any free-spanning (as stated in the CSLC regulations) at all times. The bends also prevent use of a smart pig that could be used to inspect the line – just another way of maintaining a pipeline that is not available for this line. Again, there may be technologies that can work through the bends – a suggestion that I have made in the past but was ignored - probably because they really don't want to know the actual condition of that section of pipeline, or else they will have to repair it or maybe replace it.

DS-3

The excessive erosion and scour that resulted in the rapid lowering of the sand profile in

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DS-4 1996 and 1998 was caused both by the large waves and, what is not mentioned in the draft, the excessive amount of debris observed during those storms. The large debris plows and loosens the sand allowing for it to be easily washed out to sea and thus lower the sand profile and expose the base of the bluff to the wave driven debris – mechanically excavating the bluffs right at the base – and of course, the rest of the bluff above will come down.

DS-5 There is not much that can be done to protect the beach from waves – the pipeline could be protected by proper burial below the winter sand profile – but large debris could be cleaned up before and even during large storms at low tide. An issue not mentioned in the draft – if the pipeline is not buried properly, then any way to reduce direct damage from large debris should be considered. Contrary to the operators opinion that the line is exposed almost every winter, it would be more correct to say that excessive erosion and scour will expose the pipeline only during very stormy winters – the next one could occur anytime, and if it happens, the same dangerous condition of an exposed pipeline in the surf with a lot of large debris will occur. It would not be wise to wait until after the winter storms.

The line was only seen exposed once in 1996 and its position relative to the top of one of the rails photographed. Most if not all of the subsequent subsiding occurred only during the winter storms of February 1998 when the erosion and scour was excessive. The line was re-buried naturally in the sand for two years between 1996 and 1998 and has not been seen since. In early 2006 some of the other rails out to sea were exposed, and the line was close to the surface of the sand, but not exposed as far as I know.

2) CONCERNS ABOUT EXCESSIVE SETTLING AND ASSOCIATED STRESSES

The excessive settling was briefly mentioned above. In 1999 the Santa Barbara County Energy Division conveniently denied there was any settling – quoting from the letter of June 23, 1999 (to Jim Norris from Jay Sheth):

"If the 36" sagging had occurred, the steel should be beyond its elastic range, i. e., in the plastic range (a failed state)."

They would hardly acknowledge the photos, nor would they discuss the very visible rails in the sand that marked the settling. A simple hand tool excavation close to the rails would have given an accurate measure of the settling as well as an opportunity to visually inspect that section of the pipeline that also had some damage to the thick white plastic coating – which again, was conveniently dismissed by the operator as possibly a plastic bottle. I would expect that the tension resulting from the settling would be excessive, and that either the tension is still there today, or that it has been partially relieved by movement of the pipeline – pulling the section of the line in the surf in toward the shore. That section of pipeline is beyond the observed damaged section close to the pair of rails

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and has never been seen since it is always in the surf zone even at low tides in winter and possibly partially buried even in winter, or now in summer, fully buried under the sand. That is the approximate location of the Internet photo a black substance leak. That photo was taken after the sand had built up over the summer and most of the sections of concern were under dry sand.

On page 4.1-13 the Santa Barbara Building and Safety Division is given credit for free-span calculations that "indicate that the marine loading line is vulnerable to damage if the free-span distance exceeds 30 feet (9 m)", yet they do not calculate the stresses (both bending and tension) that occurred when the line had a free-span of 55 feet (which was one observation – the maximum could have been a lot longer). In that same letter (see above) they denied that the line could have settled 3 feet, yet there are photos that verify that the settling was even greater. Now they at least admit that the settling did occur, but carefully avoid mentioning any stresses that occurred during the settling. Of course, I believe those stresses and tensions are still there in the line - locked in if I may – another detail that they care not to explain. If the stresses are not there today, how were they relieved? The line was never bought back up to its original stress-free position – it was just buried by the sand in its stressed configuration. It was determined that the GUL test could not distinguish between inner and outer wall damage – I would guess that the GUL test cannot determine if the line is under stress or tension either. The GUL testing did not extend past the first bend – the free-span occurred in the section from the sand bluff to the first bend – the settling occurred in the section between the two bends and further out to sea – the observed 3 feet or more settling and photos occurred close to the second bend. Damage to the thick white plastic coating occurred beyond the second bend, and the complete loss of the black PVC wrap and any protective coating occurred from a point roughly halfway along the first section before the first bend, along the section between the two bends, and up to the start of the section with the (now damaged) thick white plastic coating. The first half of the first section (closest to the sand bluff) was first exposed in February 1998 and it did retain most of its black PVC wrap (there are even two white PVC bands 8 feet apart) because during the storm that section was already in free-span and the waves and debris washed right under it. A CSLC inspector even mentioned that at one time there was so much free-span and air space below the line that he could walk under it. The most I ever saw and photographed was an air space of 3 to 4 feet.

DS-6

3) CONCERNS ABOUT CATHODIC PROTECTION OR LACK THEREOF

The complete loss of protective wrap and coating that occurred during the storms of February 1998 for a long section of the pipeline in the intertidal region was a concern that was dismissed with the comment that the line was being cathodically protected. There was further discussion and tests, and the cathotic protection system described – an active system was in use, and the applied voltage at the pump house was protecting the entire line with appropriate voltages – as conclusively proven by a measurement at the end of the line out in the ocean. It was never made clear how a voltage could be maintained if there was a "short circuit" directly to the wet sand on the beach due to the complete lack

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of coating, wrap, or insulation. Of course, the measured voltages at the end of the pipeline could be the result of other passive sacrificial anodes placed on that section of the pipeline – only the detailed drawings and company records would show if any passive anodes exist or if any have been maintained over the years. I had suggested taking a measurement at the end of the pipeline with the applied voltage at the pump house turned off momentarily – then the measurement should drop to zero, that is, unless there are other sources such as passive anodes for the voltage. That would be a simple prudent check since the drawings are not available, but, again, the operator dismissed the idea as being inappropriate in this case. There have been welding operations at the end of the pipeline, and maybe those records would have information on and condition of any passive anodes in that section. Of course, if there are any passive anodes, then measurements along the entire pipeline would have to be made to show that the entire line was being protected. There was one CP survey that showed data for the beach section of the line – the readings dropped erratically as the buried line crossed the beach and then the voltages started going back up – very unusual unless there are other passive anodes that are protecting the section of line under the ocean. Even if it can be shown that the line is currently being protected, a continuous record is not available and there may have been extended periods of time when the CP was inadequate. Any wall thinning would occur in the sections without coating and poor CP – the only wall thickness measurements were performed on the first 21 feet closest to the bluff and at the GUL collar locations – all before the first bend.

DS-7

4) CONCERNS ABOUT HYDRO-TESTING AND THE POSSIBLITY OF SMALL LEAKS.

Although the entire line has "passed" several annual hydro-tests, it is not clear if the short duration tests could detect a very small leak. I would suggest that a longer test such as the longer 5-year test could be performed in conjunction with the lease renewal if it has not already been performed in the last 5 years. Of course, a hydro-test is a very good test for a well maintained and inspected line – it cannot, however, indicate any weaknesses in the actual pipeline unless a very high pressure is used. If there were a small leak (such as close to where the Internet photo smudge occurred) the rest of the line in that section may be in very poor condition, and could break if exposed to scour, erosion, large debris and/or seismic stresses. It could also just rust through over time.

DS-8

5) CONCERNS ABOUT INTERNET PHOTO OF BLACK SUBSTANCE LEAK

A slow leak from a small crack or hole could accumulate as a lens shaped bubble under the wet sand – I have seen wet sand even trap air bubbles. I call it a leak because the visible plume, which is seen in the two successive Internet photos, has the same point source in the sand. Only when the conditions are right will the "bubble" be released into the surf, and then only to be seen for a very short period of time. Since the line is only used every two weeks, I would guess that the releases would be very infrequent and of

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short duration – some even at night. Any oil on the beach or in the surf is very easily confused with natural seep tars. The beach oil sampling program and report that was done in 2003 was very scientific – taking fingerprints of both oil or tar samples from the beach as well as from all the local sources – well, most of the local sources. There is one picture in the report taken just east of the buried pipeline crossing – unfortunately they did not get a sample of the contents of that pipeline to test. The best reason I have heard for that "blind spot" was that they did not have enough money to test all sources.

FINAL COMMENTS ABOUT HOW THESE CONCERNS WERE NOT RESPONDED TO BY BOTH THE ENERGY DIVISION AND THE OPERATOR.

After waiting several years for the operator to respond in writing to my concerns, which they had requested to be put together in one letter, I found out that the Energy Division could not do anything about my concerns – their previous responses covered their responsibilities and they could not do anything to get the operator to respond. They did mention this EIR process for the Lease Renewal as the only way to address my concerns again - thus my initial comments on the scoping document and now on the draft EIR.

In view of the multiple RED FLAGS and potential blind spots in the Energy Division and the operators "inspection" programs, it seems that any mitigating and or required inspections be performed sooner rather than later for the segment of the barge loading line that is in the intertidal and surf regions – preferably before the lease is either renewed or extended for another year. There may be necessary repairs, including of course, rewrapping those sections that lost their wrap in 1998. It is not good enough to just monitor the line after winter storms, and inspecting it only if exposed. In the past they just wait for it to be reburied and then report that it is safe. It is not clear what the significant environmental impacts of repairing the section of line on the beach would be – any excavation would be quickly filled by the tides. There are similar pipelines to the west that will be repaired shortly, specifically the Holly-to-shore lines. The GUL tests have so far proven of little use with respect to those sections, and no smart pig tests can be made due to the two known bends in the line – a full 360 degree visual inspection by a pipeline engineer seems to be in order right now, as it was back in 1998 and requested by the Energy Division in 2001.

DS-9

Sincerely,

David K. Sangster

Phone (805) 9680058, e-mail daksangstr@juno.com

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that.

And it's not going to be so formal, we just want to give like a project update to the community.

THE REPORTER: Can you folks please identify yourselves when you speak or ask a question, please? Thank you.

MR. SANGSTER: Sure. My name is David Sangster, I live in the area.

You mentioned the non-destructive testing and also the monitoring of the marine line during the winter storms. Usually, the winter storms occur, they find out about the exposure months later from the public. You know, they seem to miss being there at the right time, at the low tide, or whatever. It would seem like something should be done now about the marine line. T-1

And I'm not sure if just non-destructive testing really entails the visual inspection that would be required from a line that has been damaged and has been -- has settled, and also has gone through a lot of free-spanning that has not been brought up to its original position. T-2

So I guess the basic question is what kind of non-destructive testing is going to substitute in place of a visual inspection.

MR. RADIS: Actually, we require both. We're requiring both non-destructive inspection and a visual

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inspection after every storm.

MR. SANGSTER: No, but I'm talking about a current inspection of the current condition right now. It hasn't been exposed since '98. They thought that it would be exposed every year, they were going to do inspections then, but it hasn't been exposed. When you're waiting for the big, big storm that would re-expose it, and you're asking for a catastrophe because that line is now damaged. It was damaged in '98. But it seems like before the lease renewal takes place, you should have a visual inspection. You know, repair the damage, rewrap the sections that have lost their wrap, you know, replace sections that might be replacing, but not put it off until, you know, possibly the next time it's exposed.

T-3

MR. RADIS: So dig it up, you mean and --

MR. SANGSTER: A visual inspection, yes, you dig it down and look at it 360 degrees.

MR. RADIS: Okay.

MR. SANGSTER: You know, test the metal, not just with the biologist looking at it.

MR. RADIS: Right.

MR. GREIG: Yeah, the non-destructive testing that we're contemplating would be from the inside out and would look at the integrity of the pipeline and identify anomalies of the line.

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T-7

they finally admit that it did settle like three feet back in that storm. They say that it occurred from '96 to '98, but my pictures show that it occurred pretty much in February of '98.

So I'm concerned about the stresses related to the sagging and the free span. And in 2003, and listed in there, they did a stress analysis of I think it says the entire line. I have the report. They stopped the stress analysis at the bluff. They did not do any stress analysis for the section in the sand, or the intertidal zone, or beyond. They did pretty much up to the edge of the bluff.

The only reason that I could get from them is that they didn't have the money to do the rest of the analysis and, possibly, they don't have any data. They were looking for some of the drawings for that piece of pipeline back in '98, and when the county asked them to do a visual test, they determined that, well, since we're doing a visual test, we won't have to find the drawings.

But they then substituted, instead of a visual test, substituted the gull test, which in 2002 and 2003 still did not even cover that section of pipeline.

So we have essentially a blind spot that's been damaged, there's pictures, there's been letters from the county, representing that there is damage. You know, it has not been visually inspected and can't be inspected from

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RESPONSE TO COMMENT SET 15: DAVID K. SANGSTER

DS-1 The Guided Ultrasonic Wave (GUL) tests were not conducted on the portions of the pipeline that extend from the sand out to sea. This was due to the inaccessibility of these areas due to the waves and water impacts. This is discussed in the hazardous materials section HM-6 impacts. The Mitigation Measure HM-6a has been expanded to ensure GUL testing of the pipeline as far into the intertidal as practical at a minimum of every 3 years.

DS-2 The free span issue is noted in Section 4.2, Table 4.2-3. Text expanding the discussion has been added to the hazardous materials section and are included on pages 4-13 through 4-15 of this document. Based on letters from the County of Santa Barbara, which are summarized on page 4-15, there is no indication that the pipeline is operating in an unsafe manner. A detailed close interval survey of the cathodic protection system was conducted in 2002 and indicated no issues. Pipeline pressure tests have indicated that the integrity of the pipeline is intact and that no leaks have occurred, as they would have shown up in the subsequent pressure test.

DS-3 The California Geological Survey (CGS) has not mapped offshore areas under the Seismic Hazards Mapping Act, and we concur that more offshore areas should be mapped. With respect to the DEIR analysis, the closest onshore seismic guidance was used to complete the analysis of the EMT pipeline and associated facilities.

DS-4 Text has been added to HM-6a to address beach debris and its potential impacts on the pipeline (see page 4-23).

DS-5 Please see the response to Comment DS-4.

DS-6 The mitigation measure HM-6a addresses inspections of the pipeline during and after storms and the need to repair the pipe wrap if the pipe is exposed. Santa Barbara County's Building and Safety and Planning staffs have each indicated that they feel the stress issues created by past unsupported spans do not compromise the pipeline integrity.

DS-7 Mitigation Measure HM-6b has been added to address conducting close interval cathodic protection survey on a regular basis (see page 4-23).

DS-8 The California State Fire Marshal (CSFM) and the CSLC consider a 4 hour test at 125% of the maximum allowable operating pressure for 4 hours to be sufficient protection. Even a very slow leak would be increased by increasing the pressure by this extent. It would actually compromise the integrity of the pipeline to conduct a pressure test significantly above the MAOP.

DS-9 Based on letters from the County of Santa Barbara, there is no indication that the pipeline is operating in an unsafe manner. A detailed close interval survey of the cathodic protection system was conducted in 2002 and indicated no issues. Pipeline pressure tests have indicated that the integrity of the pipeline is intact and that no leaks have occurred, as they would have shown up in the subsequent pressure test.

T-1 Mitigation Measure HM-6b indicates that the pipeline should be inspected during and after each storm and the results of these inspections reported to the County and the CSLC.

T-2 The County indicates that there is no indication that the past free spans have compromised the pipeline's integrity.

T-3 HM-6a and HM-6b indicate that GUL testing should be conducted on a regular basis as far into the intertidal zone as possible to ensure that pipeline corrosion does not compromise the integrity of the pipeline.

T-7 Please see the response to Comment T-2.